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Design of a Reacceleration Experiment Using the Choppertron*,
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The Microwave Source Facility at Lawrence Livermore National Laboratory is commencing a series of experiments involving reacceleration of a modulated beam alternating with extraction of energy in the form of x-band microwaves. The Choppertron, a high-power microwave generator, is used to modulate a 5-MV, 1-kA induction accelerator beam. The modulated beam is then passed through a series of traveling-wave output structures separated by induction accelerator cells. In this paper we report on computer simulations used to design these experiments. Simulations include analysis of beam transport, modulation, power extraction, and transverse instabilities. Comparisons with experimental results are presented.

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